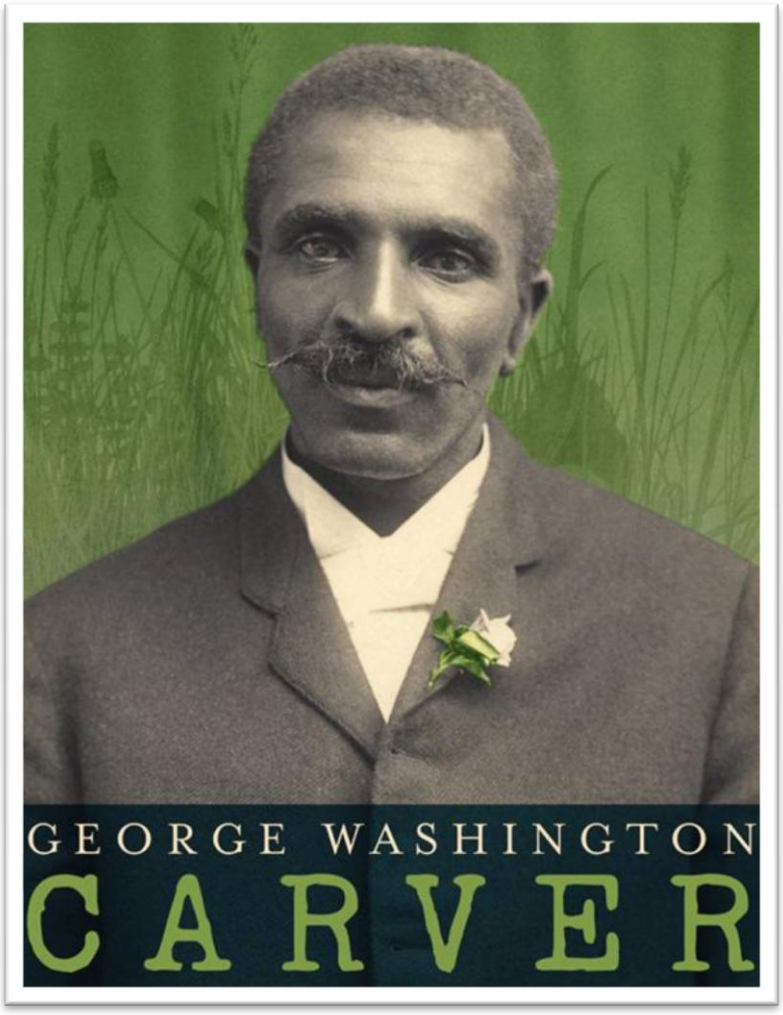
The Award Winning **Jimmy Carter Library & Museum**

ATLANTA, GEORGIA

January 14 – May 27, 2012



GWC Educator's Guide

441 Freedom Parkway, Atlanta, GA, 30312 | 404-865-7100 | www.jimmycarterlibrary.gov

Acknowledgments

Organized by Chicago's renowned **Field Museum**, in collaboration with **Tuskegee University** and the **National Park Service**, our current temporary exhibition presents a complex and intimate portrait of one of America's best known names – and least-studied men – ***George Washington Carver***. It follows Carver's entire life and career, revealing both his struggles and his remarkable achievements as scientist, conservationist, educator, and humanitarian. It brings together more than one hundred artifacts from Carver's personal life and work, along with animated and live videos, interactive displays, a diorama of Carver's childhood farm, and a re-creation of the Jesup wagon, his mobile classroom.

Although we have personalized this educator's guide for the students of the State of Georgia, it was originally created by the education staff of the Field Museum, Chicago, Illinois. We here in education at the Carter Library thank them for their wonderful work.

The Museum is open Monday through Saturday from 9am until 4:45 pm and on Sunday from noon until 4:45 pm. Admission is $8 for adults, $6 for seniors (60+), military and students with IDs. Children 16 and under are free. (The Carver exhibit is included at no additional charge) There is plenty of free parking. So please, bring your students to see…

GEORGE WASHINGTON CARVER

Now thru May 27, 2012

Jimmy Carter Presidential Library and Museum

Kahlil G. Chism
Education Specialist
JCLAM

Contents

Teacher's Note

The primary idea in all of my work was to help the farmer and fill the poor man's empty dinner pail.

~ Carver, in a 1929 letter

What makes a man a legend? In the case of George Washington Carver it wasn't just peanuts. Discover the life and work of an extraordinary man, born into slavery, who used his gifts to become a groundbreaking scientist, educator, and humanitarian with a lifelong mission: to bring practical knowledge to those in need. Through more than a hundred artifacts, along with videos, hands-on interactives, and more, this exhibition tells the story of Carver's success as a teacher and researcher, the roots of his "mighty vision," and how he laid the groundwork for organic farming and today's research on plant-based fuels, medicines, and everyday products.

Ever since Carver was a child, he spent as much time as he could outdoors. He would collect rocks and observe birds and other animals, and he even created a "secret garden." That passion remained

George Washington Carver consists of five sections. Before you visit the exhibition, spend some time viewing information on our website www.jimmycarterlibrary.gov to begin planning your visit. We also recommend using some of the fun facts and pre-activities found in this Educator Guide to introduce your students to the cultural and historical complexities of the exhibition. During your field trip, focus on one or two sections within the exhibition to study in depth. You'll find section introductions, guiding questions, answers to guiding questions, suggested pre-activities, field trip activities and post-activities in Part Two designed to guide your students' experiences.

Section Highlights

Section One:
From Slave to Scholar

Section Two:
The People's Scientist

Section Three:
The Jesup Wagon

Section Four:
Plant Power

Section Five:
Carver's Legacy

Corresponding Georgia Performance Standards (GPS)

HISTORY

GRADE ONE | SS1HI | The student will read about and describe the life of historical figures in American history.

a. Identify the contributions made by these figures: Benjamin Franklin (inventor/author/statesman), Thomas Jefferson (Declaration of Independence), Meriweather Lewis and William Clark with Sacagawea (exploration), Harriet Tubman (Underground Railroad), Theodore Roosevelt (National Parks and the environment), **George Washington Carver (science)**.

GRADE FIVE | SS5H3 | The student will describe how life changed in America at the turn of the century.

b. Describe the impact on American life of the Wright Brothers (flight), **George Washington Carver (science)**, Alexander Graham Bell (communication), and Thomas Edison (electricity).

GOVERNMENT/CIVICS

GRADE ONE | SS1CG1 | The student will describe how the historical figures in SS1H1a display positive character traits of fairness, respect for others, respect for the environment, conservation, courage, equality, tolerance, perseverance, and commitment.

ECONOMICS

GRADE ONE | SS1E1 | The student will identify goods that people make and services that people provide for each other.

SS1E3 | The student will describe how people are both producers and consumers.

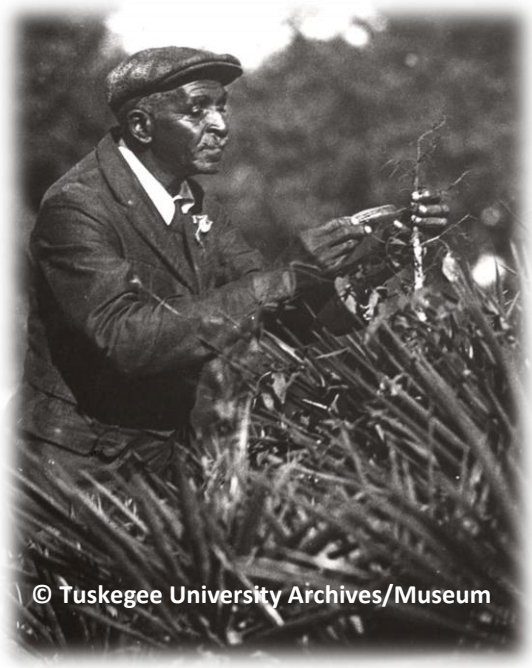
WORLD GEOGRAPHY

SSWG1 | The student will explain the physical aspects of geography.

b. Explain how human characteristics, such as population settlement patterns, and human activities, such as agriculture and industry, can describe a place.

Key Concepts

• Carver was not the only one thirsty for knowledge. During Reconstruction, the period after the Civil War, teachers were trained and schools were built for African Americans. These makeshift schools often lacked basic supplies, like blackboards, chalk, and books. The schools were overcrowded, with 50 or more children and adults in a classroom. Former slaves were so eager to learn that perfect attendance was a common occurrence.



George Washington Carver believed that nature could provide everything that people need and was innovative in creating everyday products from plants instead of resources like oil and ores.

• When Carver arrived at Tuskegee, his mission was to harness the power of nature in order to help the poor. The subjects of his research were broad in scope but his goal was singular – to serve humanity.

• Discovery was more important to Carver than memorizing facts and figures. He encouraged students to think about and explore nature for themselves. He used real plant and mineral samples in his teaching and urged his students to search out their own specimens.

• If Carver were around today, he would most certainly be on the cutting edge of environmental sustainability. Like current "organic" farmers, Carver addressed the entire natural system: water supply, soil, and organisms. He used only natural fertilizers such as compost or swamp muck; he managed insects through plant selection and crop rotation.

• Carver's efforts to develop plant-based products were fueled by his altruistic goal of revitalizing the Southern economy. He hoped to demonstrate the commercial potential of crops that were beneficial to the soil. In addition to finding markets for farmers to sell their peanut, soy bean, and sweet potato crops, many of the products developed by Carver provided alternative foods and products to poor farming families.

Words to Know

Agriculture: The science, art, or occupation concerned with cultivating land, raising crops, and feeding, breeding, and raising livestock; farming.

Applied Science: The discipline dealing with the art or science of applying scientific knowledge to practical problems.

Biodegradable: Capable of being decomposed by biological agents, especially bacteria.

Biodiversity: The variety of organisms considered at all levels, from genetic variants belonging to the same species through arrays of species; includes the variety of ecosystems, which comprise both the communities of organisms within particular habitats and the physical conditions under which they live.

Bioengineering: The branch of engineering that deals with applications of biological processes to the manufacture of products.

Biology: The science of life and of living organisms, including their structure, function, growth, origin, evolution, and distribution. It includes botany and zoology and all their subdivisions.

Biotechnology: The use of living organisms or other biological systems in the manufacture of drugs or other products or for environmental management, as in waste recycling.

Botany: The science, or study, of plants. Chemistry: The science that deals with the composition and properties of substances and various elementary forms of matter.

Chemurgy: A division of applied chemistry concerned with the industrial use of organic substances, especially substances obtained from farm produce, such as soybeans or peanuts.

Compost: A mixture of decaying organic matter, as from leaves and manure, used to improve soil structure and provide nutrients.

Conservation: The careful utilization of a natural resource in order to prevent depletion; the protection, preservation, management, or restoration of wildlife and of natural resources such as forests, soil, and water.

Cultivation: The agriculture production of food by preparing the land to grow crops, especially on a large scale.

Words to Know (continued)…

Crop Rotation: The successive planting of different crops on the same land to improve soil fertility and help control insects and diseases.

Distillation: The purification or concentration of a substance, the obtaining of the essence or volatile properties contained in it, or the separation of one substance from another, by such a process.

Ecology: The branch of biology dealing with the relations and interactions of organisms with their environment, including the physical environment and the other organisms living in it.

Ecosystem: The organisms living in a particular environment, such as a lake or forest, and the physical part of the environment that affects them. The organisms alone are called the community.

Ethnobotany: The plant lore and agricultural customs of a people.

Geology: The study of the earth—past and present—and the processes that shape it.

Horticulture: The cultivation of a garden, orchard, or nursery; the cultivation of flowers, fruits, vegetables, or ornamental plants.

Humanitarian: Having concern for or helping to improve the welfare and happiness of people. a person actively engaged in promoting human welfare and social reforms, as a philanthropist.

Timeline of Carver's Life

1864: Born a slave in Diamond, Missouri. After mother Mary is kidnapped, lives with Moses and Susan Carver, his owners.

1877: Move to Neosha, Missouri, to attend an African-American school. Lives with Andrew and Mariah Watkins.

1879: Enters high school in Olathe, Kansas. Lives with Ben and Lucy Seymour.

1880: Move to Minneapolis, Kansas. Attends a four-room school with white students.

1885: Move to Highland, Kansas, to attend a small Presbyterian College after receiving acceptance by mail. He is turned away at the door because he is black.

1889: Opens a laundry in Winterset, Iowa. Meets the Milhollands who encourage him to enter college and study the arts.

1890: Enrolls in Simpson College, in Indianapolis, IA, to study art and music. His art teacher encourages him to pursue the agriculture sciences.

1891: Enrolls in Iowa State College of Agriculture, in Ames, Iowa.

1894: Appointed Assistant Professor of Biology and first black faculty member of Iowa State.

1896: Accepts Booker T. Washington's invitation to head the agricultural department at Tuskegee Institute, in Alabama.

1906: Builds the Jesup Wagon and starts "moveable school" program distributing agricultural information across Alabama.

1910: Carver receives a fully equipped research laboratory from Tuskegee Institute.

1921: Carver addresses the U.S. House of Representatives in favor of a peanut tariff to protect American peanut farmers.

1920s: Carver is invited to address Southern white colleges to promote racial harmony.

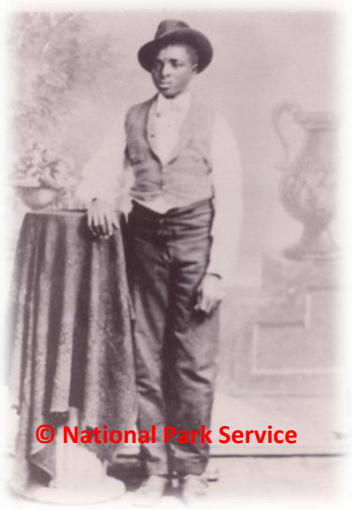
1930s: The "Chemurgy Movement" recognized Carver as "the first and greatest chemurgist."

1941: The George Washington Carver Museum dedicated at Tuskegee University.

1943: Carver dies of heart failure at age 78 in Tuskegee, Alabama.

Section One: From Slave to Scholar

Carver was born into slavery, struck with a life-threatening illness, kidnapped, orphaned, and emancipated all before his first birthday. Born in 1864 during the Civil War, Carver and his mother Mary were kidnapped by slave raiders. Their owner Moses sent a scout to bring them back but only baby George was recovered. Suffering from whooping cough, he had been left for dead. Illness continued to plague his childhood, leaving him too weak for strenuous labor. George and his brother Jim were adopted by their owners, Moses and Susan Carver. Jim worked alongside Moses in the fields while George was given household duties and taught handiworks by Susan.



A portrait of an adolescent George Washington Carver, circa 1876.

The Carver's 240-acre farm was located near the town of Diamond, Missouri. It was here that George began to foster his curiosity for nature, collecting specimens and investigating how natural systems work together. He was so naturally gifted at plant care that local people called him the "Plant Doctor". He learned how to cook, make clothing, dyes, soap, and homeopathic remedies.

George also was a lover of music and the arts. His interest was inspired in part by Moses Carver, who played the fiddle. Both talented and resourceful, music became one of George's many joys. He learned to sketch and paint, fashioning brushes from bunched-together twigs and making colors from boiled bark and berries. George learned how to read from a hand-me-down spelling book, Webster's "Blue Back Speller." He yearned for a formal education but the closest school was for whites only.

Carver with other junior faculty members at Iowa State University. Carver's thirst for knowledge led him there after spending a year at Simpson College, also in Iowa.

In 1877, George left the Carver farm to attend an African-American school in the nearby town of Neosha, Missouri. In 1891, he enrolled in the College of Agriculture at Iowa State University and excelled in his academic studies. In 1894 Carver became the first black member of the Iowa State faculty when he was appointed Assistant Professor of Biology.

Section One: From Slave to Scholar (continued)

Guiding Questions

1. Name some of the handicrafts Carver learned to make as a child.
2. What are fossils and how are they formed?
3. What musical instruments did Carver play?
4. What did George study at Simpson College? Name his teacher there.
5. Why did Carver decide to pursue agricultural science at Iowa State?

Carver was not only a botanist, he was also an artist, pursuing art at Simpson College. Although many of his works were lost in a fire, some depicting nature still exists.

Pre-Activities

1. Ask students to make a detailed drawing of what you think an 1870's farm would look like. Compare your drawings to the diorama of the Carver farm when you visit the exhibition.
2. Visit your school library and view the earliest edition spelling book available. Compare this book to the current version used in your classroom. What are the similarities and differences?

Post-Activities

1. Take a deeper look at the racial tensions at the time of the Civil War. What was lynching and why did it occur? What are segregation, emancipation, and slavery? Why did racism cause people to act unjustly towards fellow human beings? After the Civil War was over, how was life improved for African-Americans? How long did these improvements take? Does racism exist today? How does it impact our society? How has Carver's legacy impacted the way we think about the Civil War today?

Section One: From Slave to Scholar (continued)

2. Many historically significant events happened during Carver's life, as well as numerous innovations in science and technology. Have a conversation with an older friend, relative, or neighbor and ask your students' what major events occurred during his or her lifetime. How did those events change their perception of the world and impact scientific or social advances for Americans?

3. Carver collected rocks, fossils, plants, and other items he found interesting in the natural world. Do you have any collections at home? What are they and why are they important to you? Write a brief paper or make a short presentation explaining the significance of your collection.

4. Carver used plants for many purposes including cooking, dying clothing, and making homeopathic remedies. This initial exploration of plants inspired Carver's later work, much of which has impacted our modern world. Spend a week searching for plants and plant products in your home and school. Collect, photograph, and share examples. Explore the amazing diversity of plants that color, shape, and support your environment.

Answers to Guiding Questions

1. Weave, crochet, knit, embroidery, and sewing.

2. Fossils are the remains or traces of organisms that were once alive. Fossils can include bones, trackways, skin impressions, etc.

3. Accordion, guitar, and the piano.

Carver also had a love for music. He taught music lessons and used his talent to earn money to continue his education.

Section Two: The People's Scientist

Carver believed that hands-on instruction was the most educational and effective, so he often took his students outside the classroom.

In 1896, Booker T. Washington invited Carver to head the Agricultural Department at Tuskegee Normal and Industrial Institute in Alabama. Carver accepted the offer, believing he could use the position as an opportunity to alleviate the physical and economic stress of impoverished blacks in the south. His goal was to serve humanity by harnessing the power of nature to help the poor.

"The primary idea in all of my work was to help the farmer and fill the poor man's empty dinner pail."

~ George Washington Carver, in a 1929 letter.

Segregation, violence, and economic oppression characterized life for Southern blacks when Washington began building Tuskegee Institute in the 1880's. Tuskegee Institute became a haven where African-Americans could embark on the road to independence. Both Carver and Washington shared the belief that blacks should achieve economic independence before working for political and social equality. Carver encouraged his students to live a self-sustainable existence, much like life on the Carver farm. Students raised their own food, made their clothing and fired their own bricks to build classrooms.

Section Two: The People's Scientist (continued)

When he arrived at Tuskegee, Carver was shocked to find a meager classroom devoid of lab equipment. Armed with one microscope, his departing gift from Iowa State, built a laboratory from the ground up, by scavenging materials from the junkyard. Carver had a vision to transform the barren grounds of Tuskegee into a lush, green farm. He wanted to see crops flourish and become abundant enough to ensure that people were prosperous, self-reliant, and well-nourished.

At his Agricultural Experiment Station, Carver tested different types of plants, soils, and farming techniques including crop rotation, composting and fertilization, pest control, and the introduction of "soil building plants." He focused on peanuts, sweet potatoes, and black-eyed peas, three crop plants that improved soil quality while offering nutritional value for people. Carver understood the relationships between living things and their environments. He became a pioneer for organic gardening as well as other lifestyle choices that we refer to today as "green living".

Carver's dedication to agricultural work and his innovations in crop rotation and organic farming helped diversity the Southern economy.

Guiding Questions

1. What were some of the challenges blacks in the South faced at the time Carver moved to Tuskegee in the 1890's?

2. Why did some of the faculty at Tuskegee Institute resent Carver?

3. What is "applied science" and what are its benefits?

4. What are some of the methods Carver used to save Southern soil?

5. What is sharecropping? Was this an equitable approach to farming?

6. What is mycology and how was it used by Carver?

Section Two: The People's Scientist (continued)

Pre-Activities

1. Explore the Tuskegee University website: www. tuskegee.edu. What type of institution is it? Where is it located? Who makes up the student body there? Keep these factors in mind when walking through the Carver exhibition.

2. Conduct some research as to why Carver's work was especially crucial in the South. What was industry like before his arrival? Why was cotton such a fixture in the South? How does cotton growth affect soil? How and why did this industry die out and how did introduction of new plant species help to topple the "King Cotton"?

Post-Activities

1. Compare the belief systems of black civil rights activists and scholars Booker T. Washington and W.E.B. Du Bois. How do these two schools of thought differ from one another? To which school(s) of thought did Carver adhere? How and why? What are the pros and cons of each school of thought?

2. In small groups, have students brainstorm and make household, personal or classroom items out of recycled goods. What are the benefits of recycling and reusing items for a different purpose?

3. Many of the innovative agricultural practices that Carver developed would today be referred to as "green" or "organic" farming. What are the principles of organic farming and why do some prefer these over conventional farming practices? Research local farmers, retailers, and companies that grow and sell organic goods. Where are they located? What percentage of the market do they cover? Do you use any "green" products at home?

Answers to Guiding Questions

1. Blacks in the South faced segregation, violence, and economic oppression long after the Civil War ended.

2. Carver aroused resentment and suspicion because he wasn't from the South, was educated at a white university, had a higher salary and demanded special treatment in some faculty member's opinions.

3. "Applied science" the application of knowledge from one or more natural scientific fields to practical problems such as hunger, disease, natural resource management, etc.

Section Two: The People's Scientist **(continued)**

4. Carver used crop rotation, composting, fertilization, pest control, and the introduction of soil building plants as methods to repair southern soil.

5. Sharecroppers worked a section of someone else's land in exchange for a percentage of the harvest. They often had to borrow against their share to get by until harvest time so it was not unusual for debt to exceed earnings. This bound the sharecropper to the farmer until the debt was paid off.

6. Mycology is the study of fungi. Carver did extensive research on fungal plant diseases.

Section Three: Jesup Wagon

Designed by Carver, the Jesup Wagon was used to carry his agricultural science to the people. It was equipped with soil samples, farm equipment, recipes, plants, and anything else that could have been used as a teaching tool.

Carver spent much time talking to farmers, often after church, at fairs and exhibitions. When Booker T. Washington approached him with an idea for a "moveable school," Carver designed a wagon outfitted with display charts, agricultural products and equipment and proposed a series of lectures and demonstrations. The name of this "moveable school" was the Jesup Wagon. During its inaugural summer, the Jesup Wagon reached over 2,000 people each month. The Jesup program spread agricultural knowledge to Alabama farmers and helped Carver gain recognition as a chemist and agriculturalist.

Carver's Jesup Wagon distributed an array of teaching tools and giveaways, ranging from garden tools to seed packets. At times, Carver even brought different breeds of livestock with the wagon. The Jesup Wagon also offered lessons aimed at household living, designed to help farmers' wives improve both the aesthetics and sanitary conditions of their work.

Carver also published bulletins, written in a language that was easy to understand and that dealt with practical matters. His mission was to support the health and prosperity of farmers by not only increasing and ensuring annual productivity, but by improving living conditions of farmers and their families.

Section Three: Jesup Wagon (continued)

Guiding Questions

1. Who was the Jesup Wagon named after? Who was he?

2. When was the Jesup Wagon designed? How much did it cost to build?

3. How many people did the Jesup Wagon reach during its inaugural summer? Did people travel great distances to see the Jesup Wagon in action?

4. What topics did Carver cover in his Jesup Wagon demonstrations and bulletins?

5. What topics were geared towards women?

Post-Activities

1. Design your own educational "Jesup Wagon". Choose a scientific topic that you wish to inform your classmates about and design a wagon (either in blueprint or model form) that would be effective in presenting this information to the public.

2. Bring in newspaper and magazine articles, photographs and clippings pertaining to food growth, production, recipes, household tips, etc. Have students assemble bulletins with their favorite growing tips, recipes, craft activities to share with others.

Answers to Guiding Questions

1. The Jesup Wagon was named for the man who funded it, Morris K. Jesup.

2. The Jesup Wagon was designed by Carver in 1906. It cost $674 to build and outfit. The faithful reproduction designed by The Field Museum, which is currently on display at the Jimmy Carter Presidential Library and Museum, cost around $30,000.

3. The Jesup Wagon reached between 6,000 and 8,000 people its inaugural summer. Visitors came from as far as China, India, and Russia to see it.

4. Jesup Wagon topics ranged from plants & seeds and soil samples to farm equipment and Carver products. The Wagon also distributed bulletins such as "How the Farmer Can Save his Sweet Potatoes" and "Nature's Garden for Victory and Peace."

5. The Jesup Wagon contained tips on preserving food, sewing, making whitewash, and home decoration tips. Later in its history the Jesup Wagon even had a nurse accompany it to provide basic medical care to visitors.

Section Four: Plant Power

Carver wanted to highlight the economic potential of alternative crops but first he had to identify which plants were most effective in doing so. He began research on plants that would later make him famous: peanuts, or goobers as they were often called. He unleashed the potential uses of sweet potatoes and soybeans, and inspired a movement that has renewed importance today—developing agricultural alternatives to petroleum products.

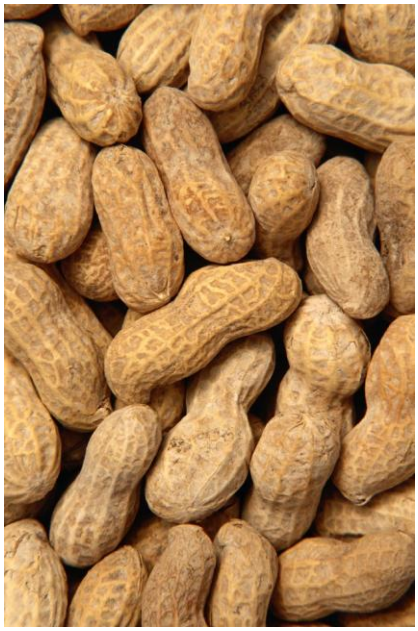
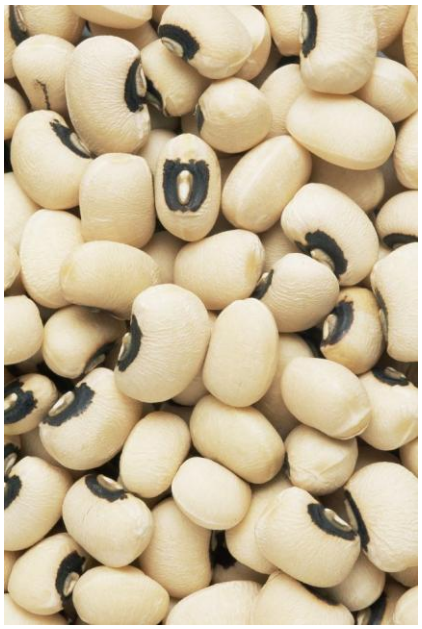
> ***"I believe the Great Creator has put oils and ores on this earth to give us a breathing spell… As we exhaust them, we must prepare to fall back on our farms, for we can begin to synthesize materials for every human need from the things that grow."***
>
> **~ George Washington Carver**

Carver's chemistry was extraordinary in its creativity and humanitarian applications. He joked about being a "cook stove chemist." In 1910, Tuskegee Institute promised Carver a fully equipped laboratory to continue his work. Carver used a variety of different processes and equipment to break test plants into component parts which he later recombined to make diverse products.

Carver's chemistry creations resulted in hundreds of new uses for peanuts, sweet potatoes, and soy beans. While Carver's scientific approach may have been unique at the time, many cultures throughout the world and throughout history have relied heavily on plants to make food, medicine, clothing, shelter, and other products. The study of how various cultures use local plant resources is called "economic botany".

Guiding Questions

1. List some of the items found in Carver's laboratory.
2. What are the component parts that Carver broke the plants into in his laboratory?
3. What is "economic botany"?
4. What are some of the products that Carver produced from peanuts? Sweet potatoes? Soy beans?
5. What is the "chemurgy movement" and what are its goals?
6. What are some of the plant based products—seen in the exhibition—produced by companies today?


Section Four: Plant Power (continued)

Pre-Activities

- Look up the history of the "Chemurgy Movement" and its applications today. What are the principles and aims of this movement? Look around the classroom to find products produced as a result of the chemurgy movement. Look for similar items at home, and in the car as well.

Field Trip Activities

- How many of the items listed as Carver's laboratory equipment are also considered kitchen utensils? How are such items used in cooking? What is the correlation between Carver's experiments and what occurs in the kitchen? How is food broken down into different parts during cooking? List some of those parts.

Post-Activities

1. Have students cut out product labels at home to see if the products they use are made from peanuts, sweet potatoes, or soy beans. What are some of the products that do use those plant items as a base ingredient? What other modern products use corn and sugar beets as a base in their manufacture?

2. What was the World's Colombian Exposition of 1893? Look up the history and variety of events and collections displayed at that exposition. What was the purpose of this event? How were different cultural ideas displayed? How were scientific ideas presented?

3. Conduct a short paper or short presentation on a company that practices chemurgy. What are their motivations for using biodegradable, recycled and environmentally friendly products? What are the positive impacts these companies are having on both the environment and consumer industries as a whole?

This apothecary jar was part of Carver's lab. His experiments were creative and influenced by his humanitarian mission.

Section Four: Plant Power (continued)

Answers to Guiding Questions

1. Rolling pin, black pot and lid, mortar and pestle, copper bulb, Bunsen burner, pressure gauge, ringstand with clamp, brass bulb with glass tube, double globe beaker, glass flask, extracting tube, distilling apparatus, conical distiller, distilling flask, test tubes, jars filled with specimens, red grinder, hydraulic press.

2. Carver broke plants down into fats, proteins, water, sugars, acids, and starches.

3. Economic botany is the study of how people of a particular culture or region make use of local plants for food, medicine, household items and other products and building materials.

4. Answers will vary.

5. The "chemurgy movement" creates industrial products, like plastics and bio-fuels, from agricultural materials. These products cut down on the amount of natural resources consumed; many of the products are biodegradable as well.

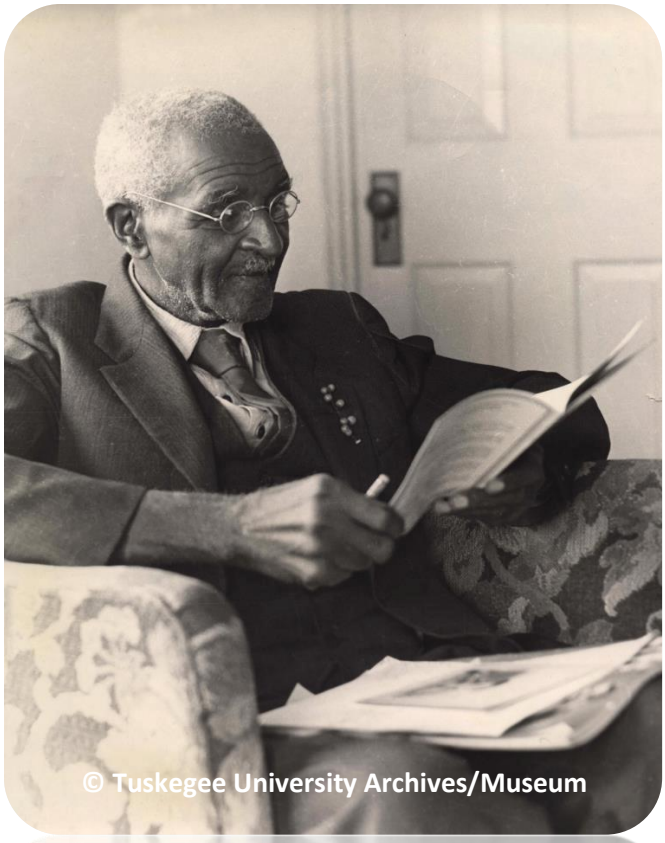
6. Biofuels, water bottles, plates and utensils, building materials, roofing membranes, newspaper inks, art supplies, cleaning products.

Carver created many of his recipes in this cast iron pot during his experiments, jokingly calling himself the "cook-stove chemist."

Section Five: Carver's Legacy

While no single history-altering invention or process can be attributed to him, Carver leaves a powerful scientific legacy. His genius was in his application of science to practical purposes. Ecology, conservation, ethno-botany, bio-engineering, and biological product development are disciplines that carry on Carver's tradition.

In 1921, Carver was invited to address the U.S. House of Representatives in favor of a peanut tariff protecting American peanut farmers. His presentation was so captivating that it gave him the reputation of "The Peanut Man." Exaggerated claims about his discoveries circulated and his work became legendary. Although the press was not always accurate, it served to draw attention to Tuskegee and Carver's work there.



Carver began touring and speaking not only in favor of his research but as a voice in the fight to promote racial harmony in the South. Jim Crow laws passed in the 1890's kept Carver from riding on the same trains, dining in the same restaurants, and using the same rest facilities as the crowds he addressed.

Where there is no vision, there is no hope.
~ George Washington Carver

Carver was honored with numerous awards, tributes and memorials. In 1941, the George Washington Carver Museum was dedicated at Tuskegee Institute. He was also the first African American and the only non-president to have his birthplace honored as a national monument. Carver devoted his life to finding solutions for hunger, poverty, illness, environmental devastation and dependence on fossil fuels. His "Mighty Vision" serves as an inspiration for all who hope to improve life on Earth.

Section Five: Carver's Legacy (continued)

Guiding Questions

1. Name some scientific fields that have been influenced by Carver's research.
2. Why did Carver address the U.S. House of Representatives in 1921?
3. What were Jim Crow Laws? How did they affect Carver's travels?
4. What is significant about the Carver National Monument?

Henry Ford and Carver were not only friends, but also experimented with plant-based plastics and fuels. Included in *George Washington Carver* are photographs like this one and letters between the two.

Section Five: Carver's Legacy (continued)

Pre-Activities

- Look up local conservation and recycling programs in your neighborhood. How do these programs enhance the quality of life for the members of your community? Are these programs carried out on a national or global level? If so, how and what changes are they helping to bring about?

Post-Activities

1. Research the history of segregation in the South. Look at Jim Crow Laws and the movement to get them repealed. Look at the Civil Rights Movement and the struggle that blacks endured to gain equality and justice in the United States.

2. Visit the George Washington Carver Foundation and Museum at Tuskegee http://www.nps.gov/tuin/ and the Carver National monument websites http://www.nps.gov/gwca/ to see what events and programs take place. How do these events and programs help to carry on the legacy of Carver?

3. Visit the Tuskegee University web/site to view the on-going research and developments made in their agricultural department. http://www.tuskegee.edu/ How does this research build on Carver's work and help to preserve his legacy?

Answers to Guiding Questions

1. Ecology, conservation, ethnobotany, bioengineering, and biological product development are all areas that have been influenced by and carry on the Carver tradition.

2. Carver spoke at a House of Representatives meeting in favor of a proposed tariff that would protect American peanut farmers from foreign competition.

3. Jim Crow Laws were designed to separate the races mandating different restaurants, rest facilities, train cars, schools, and other public spaces for whites only or blacks only.

4. Carver is the first African American and the only non-president to have his birthplace honored as a national monument.

PART THREE: Related Resources

Books for Educators

Burchard, Peter Duncan. Carver: A Great Soul. Serpent Wise: Fairfax, 1998.

Edwards, Linda McMurray. George Washington Carver: Scientist and Symbol. Oxford University Press: New York, 1982. Holt, Rackham, ed. George Washington Carver, an American biography. Doubleday, Doran and Co., Inc.: New York, 1943.

Karson, Jill, ed. Leaders of the Civil Rights Movement. Greenhaven Press: Farmington Hills, 2005. Kremer, Gary R., ed. George Washington Carver: In his own words. University of Missouri Press: Columbia,

1987. Lotz, Philip Henry. Rising Above Color. Books for Libraries Press: Freeport, 1972.

Manber, David. Wizard of Tuskegee: The Life of George Washington Carver. Crowell-Collier Press: New York,

1967. Neyland, James. George Washington Carver. Melrose Square Pub. Co.: Los Angeles,

1991. Norrell, Robert J. Reaping the whirlwind: The Civil Rights Movement in Tuskegee.

Knopf: New York, 1985. Wellman, Sam. George Washington Carver: Inventor and naturalist. Thorndike Press, Thorndike, 2001.

PART THREE: Related Resources **(continued)**

Books for Students

Benitez, Mirna. George Washington Carver, Plant Doctor. Raintree/Steck-Vaughn: Austin, 1992. Driscoll, Laura. George Washington Carver: The Peanut Wizard. Grosset & Dunlap: New York, 2003. Edwards, Linda McMurry. George Washington Carver: The life of the great American Agriculturalist. Power

Plus Books: New York, 2004. Greene, Carol. George Washington Carver: Scientist and Teacher. Childrens Press: Chicago, 1992. Halvorsen, Lisa. George Washington Carver: Innovator in Agriculture. Blackbirch Press: San Diego, 2002. Loesch, Joe. George Washington Carver: The Great Peanut Adventure. Toy Box Productions, 2003. Nelson, Robin. George Washington Carver: A life of devotion. Lerner Publications: Minneapolis, 2007. MacLeod, Elizabeth. George Washington Carver: An innovative life. Kids Can Press: New York, 2007. McKissak, Pat. African-American Scientists. Millbrook Press: Brookfield, 1994. McLonne, Margo. George Washington Carver: A photo-illustrated biography. Bridgestone Books: Mankato,

1997. Meloche, Renee Taft. George Washington Carver: America's Scientist. Emerald Books: Lynnwood, 2006. Monroe, Judy. George Washington Carver: Scientist and Inventor. Capstone Press: Mankato, 2006. Rogers, Teresa. George Washington Carver: Nature's Trailblazer. Twenty-first Century Books: Frederick, 1992. Stanley, Phyllis M. American Environmental Heroes. Enslow Publishers: Springfield, 1996.

PART THREE: Related Resources (continued)

Recommended Websites

The College of Agricultural, Environmental and Natural Sciences offers an education that prepares future professionals and leaders in the life sciences through course work along with research and outreach activities. Our college has inherited the legacy of George Washington Carver with his many contributions to teaching, research, outreach and new product development—aimed at serving the unreached of his time. http://www.tuskegee.edu/Global/category.asp?C=35008&nav=CcX8CqP5

Welcome to the official homepage of the George Washington Carver National Monument. Here you will find access to photos and information about Dr. Carver and the National Park dedicated to his remembrance. http://www.nps.gov/archive/gwca/expanded/main.htm

Since the beginning of America's existence, education has always been considered as one of the keys to social, political and economical acceptance for African Americans. Tuskegee Normal School was established by the state of Alabama, influenced by a former slave and a former slave owner to educate newly freed people and their children. The Normal school, later Institute, became a beacon of hope for African Americans to reach their goal of acceptance. The school officially opened on July 4, 1881 in the African American Methodist Episcopal Zion Church under the auspices of religion. This date was chosen to commemorate the independence of a Nation and the freedom of a forgotten people. Booker T. Washington became the first principal of a newly formed school at the age of twenty-six. He later hired individuals like George W. Carver and Robert Taylor to help lead the institute to its world-renowned status. http://www.nps.gov/tuin/

Educators who are involved in establishing and/or maintaining a garden or a school "growing program" now have the Green Teacher Network. With the help of three well-known "green" organizations (Openlands Project, Garfield Park Conservatory Alliance and the Chicago Botanic Garden), the Network fosters the implementation of plant-based learning in Chicago-area schools and supports teachers' efforts to create and use school gardens as curricular tools. http://www.garfieldconservatory.org/teacher_gtn.htm

Where can you go for fresh ideas, innovative teaching techniques and meaningful science content? Educator programs through the Chicago Botanic Garden's Center for Teaching and Learning provide an enjoyable and educational way to increase your science content knowledge while learning standards—based teaching methods appropriate for a diverse range of learning abilities. Plant-based activites provide the basis for learning by doing and support multiple learning styles. Because of this, all workshops are appropriate for teacher of students with special needs. http://www.chicagobotanic.org/ctl/educators The University of Chicago Botanic Garden is an educational resource intended to grow, display, and document plant materials of both ornamental and scientific interest suited to the environment of the Chicago lakefront. The Botanic Garden will thereby provide a campus environment rich in horticultural diversity and beauty that can be appreciated readily by the University and the surrounding community. http://www.uchicago.edu/docs/gardbroNS/

Discover the pleasures of Chicago Park District treasures! The Chicago Park District manages over 220 stunning facilities throughout the city – most can play host to your next event. For more information

about the Chicago Park District's more than 7300 acres of parkland, 552 parks, 33 beaches, nine museums, two world-class conservatories, 16 historic lagoons, 10 bird and wildlife gardens, thousands of special events, sports and entertaining programs, please continue on through the event section. http://www.chicagoparkdistrict.com Farmers' markets are one of the oldest forms of direct marketing by small farmers. From the traditional "mercados" in the Peruvian Andes to the unique street markets in Asia, growers all over the world gather weekly to sell their produce directly to the public. In the last decade they have become a favorite marketing method for many farmers throughout the United States, and a weekly ritual for many shoppers. http://www.localharvest.org/farmers-markets/M1972

The Henry Ford is the history destination that brings the American Experience to life. With a rich and diverse offering of exhibits, demonstrations, programs and reenactments, The Henry Ford celebrates yesterday's traditions as well as today's innovations. Five distinct attractions at The Henry Ford captivate and inspire visitors of all ages. http://www.hfmgv.org/

In 1968, the museum was renamed after Jean Baptist Pointe DuSable, a Haitian fur trader who was the first permanent settler in Chicago. In 1971, the Chicago Park District granted the museum's request to use a former park administration building in Washington Park. The museum became the city's principal memorial to Jean Baptiste Pointe DuSable and the eighth member of the consortium of museums on Park District land. In 1993, the museum opened a new wing bearing the name of the late Mayor Harold Washington that included additional gallery space on two floors and a 450-seat theatre. http://www.dusablemuseum.org/

The HistoryMakers represents the single largest archival project of its kind in the world, outdistancing the existing video oral history collections of New York's Schomburg Library and the Birmingham Civil Rights Museum. The HistoryMakers is unique among these other collections of African American heritage, because of its massive scope. Like other oral history collections, The HistoryMakers collection hearkens back to the earliest and most authentic efforts to capture the voice of a people, while introducing state-of-the-art technology and increased accessibility. The HistoryMakers wants to provide living proof that African American history did not begin or end with the civil rights movement, that the HistoryMakers number in the thousands and that their names are not just Harriet Tubman, W.E.B. DuBois, Martin Luther King, Jr. and Ella Fitzgerald. http://www.thehistorymakers.com/

Discover the missing pages of history and relive the dramatic Underground Railroad period through maps, rare photographs, background information and activities that bring this little-known chapter of American history to life. http://www.ugrr-illinois.com/

The National Civil Rights Museum, located at the Lorraine Motel, the site of Dr. Martin Luther King's assassination, chronicles key episodes of the American civil rights movement and the legacy of this movement to inspire participation in civil and human rights efforts globally, through our collections, exhibitions, and educational programs. http://www.civilrightsmuseum.org/

PART FOUR: Noteworthy Information

- The scouts reward for returning baby George to the Carver's after his kidnapping was a race horse.
- Carver's brother Jim, the "strong one" died of small pox in his 20's, while George the "sickly one" lived to be 78.
- One night George had a dream about a pocket knife he desired. The next day he looked in the field and found one stuck in a watermelon.
- One of Carver's paintings won an award at the 1893 World's Colombian Exposition in Chicago.
- To help put himself through school, Carver took in laundry, typed telegrams, and taught guitar lessons.
- Carver always wore a cut flower in his jacket lapel.
- By 1896 Tuskegee Institute had expanded to 40 buildings on a 100-acre farm.
- A microscope, his going away present form Iowa State, was Carvers only real lab equipment when he arrived at Tuskegee.
- Carver used peanuts, sweet potatoes, and black-eyed peas because of their abilities to improve the soil and their high nutritional value for humans.
- In the 1930's Mahatma Gandhi wrote to request copies of Carver's bulletins to aid his work with the poor in India.
- Contrary to popular belief, Carver did not invent peanut butter.
- Convinced of the restorative nature of peanut oil, Carver began testing it on polio victims, with great success.
- Carver's House of Representatives presentation coined him the nickname "The Peanut Man".
- Legend has it Thomas Edison offered Carver a six-figure salary to come work in his laboratory.
- President Franklin Roosevelt, a polio victim, received a gift of peanut oil from Carver. He visited the scientist at Tuskegee in 1939.